

CLAIMS

1. A reception apparatus comprising:

a determination section that makes a determination
of a propagation path state through which a received
5 multicarrier signal is transmitted;

a specifying section that specifies a region having
a propagation path state that is equal to or better than
a predetermined level in a frequency band used for the
received multicarrier signal, according to the
10 determination result; and

a reporting section that reports region information
indicating the specified region to a transmission
apparatus.

15 2. The reception apparatus according to claim 1,
wherein:

the frequency band used for the received
multicarrier signal is divided into a plurality of
frequency bands known to both the transmission apparatus
20 and the reception apparatus;

the specifying section has a selection section that
selects a frequency band having a propagation path state
that is equal to or better than a predetermined level
among the plurality of frequency bands; and

25 the reporting section transmits a report signal via
the frequency band selected by the selecting section,
and reports the region information to the transmission

apparatus.

3. The reception apparatus according to claim 2,
wherein the report signal comprises an ACK signal or an
5 NACK signal used for automatic repeat request control.

4. The reception apparatus according to claim 3,
wherein the ACK signal and the NACK signal are
distinguished by a difference in pilot patterns or
10 transmission power.

5. The reception apparatus according to claim 2,
wherein the reception apparatus sets a transmission
signal modulation scheme based on reception quality of
15 the received multicarrier signal, and the report signal
is modulated by a modulation scheme having a higher
transmission rate than the modulation scheme set based
on the reception quality.

20 6. The reception apparatus according to claim 2,
further comprising, a generation section that generates
additional information on the frequency band selected
by the selecting section, wherein:

the selecting section selects a plurality of
25 frequency bands included in the region having the
propagation path state that is equal to or better than
the predetermined level;

the generation section assigns priorities to the plurality of frequency bands selected by the selecting section according to the propagation path state, and includes the priorities in the additional information;

5 and

the reporting section reports the additional information in addition to the region information to the transmission apparatus.

10 7. The reception apparatus according to claim 6, wherein the reporting section changes the pilot pattern or transmission power of the report signal according to the priorities assigned by the generation section, and reports the additional information to the transmission
15 apparatus.

8. The reception apparatus according to claim 1, wherein, after the region information is reported, reception processing of the received multicarrier signal
20 is performed in the region specified by the specifying section.

9. The reception apparatus according to claim 1, further comprising:

25 an identifying section that identifies a type of data mapped on the received multicarrier signal; and a control section that stops part of circuit for

a predetermined time period when the identified data type corresponds to data that is successively transmitted from the transmission apparatus or data for which a reception error within a predetermined range is allowed.

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10. The reception apparatus according to claim 1, further comprising:

a determining section that determines whether or not the reception apparatus is in a static state; and

10 a control section that stops part of circuit for a predetermined time period when the reception apparatus is determined to be in the static state.

11. The reception apparatus according to claim 2,
15 further comprising:

an acquisition section that acquires the number of communication terminals in a communication system to which the reception apparatus belongs,

20 wherein the reporting section repeats the report signal when the acquired number of communication terminals is equal to or less than a predetermined value.

12. The reception apparatus according to claim 1, wherein the determining section performs one of
25 estimation of the propagation path fluctuation of the received multicarrier signal and reception quality measurement of the received multicarrier signal to

determine the propagation path state of the received multicarrier signal.

13. The reception apparatus according to claim 2,
5 wherein a plurality of subcarrier signals included in the frequency band are assigned to the reception apparatus and other reception apparatuses in advance.

14. The reception apparatus according to claim 2,
10 wherein the report signal is subjected to code division multiplexing.

15. A transmission apparatus comprising:
an acquisition section that acquires from a
15 reception apparatus, frequency band information indicating a frequency band having a propagation path state that is equal to or better than a predetermined level among a plurality of frequency bands, into which a frequency band used for a transmission multicarrier
20 signal is divided and which are known to both a transmission apparatus and a reception apparatus; and

a transmitting section that transmits a signal to the reception apparatus via the frequency band indicated by the frequency band information.

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16. The transmission apparatus according to claim 15, wherein the acquisition section comprises:

an identifying section that identifies the frequency band through which a signal is transmitted from the reception apparatus; and

5 a judging section that judges that the identified frequency band is the frequency band having the propagation path state that is equal to or better than the predetermined level.

17. A communication terminal apparatus comprising the
10 reception apparatus according to claim 1.

18. A communication terminal apparatus comprising the transmission apparatus according to claim 15.

15 19. The transmission apparatus according to claim 17, wherein the reporting section that performs reporting when a frequency band assigned to a communication terminal is updated.

20 20. A base station apparatus comprising the reception apparatus according to claim 1.

21. A base station apparatus comprising the transmission apparatus according to claim 15.

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22. The base station apparatus according to claim 21, wherein:

the acquisition section acquires a priority of the propagation path state of the frequency band in addition to the frequency band information from each communication terminal; and

5 the transmitting section determines a frequency band to assign to a signal for each communication terminal based on the frequency band information and the priority of the propagation path state of the frequency band.

10 23. The base station apparatus according to claim 22, wherein the transmitting section reports the determined frequency band to each communication terminal before transmitting a signal to each communication terminal.

15 24. The base station apparatus according to claim 23, wherein the transmitting section transmits a report signal via the determined frequency band.

20 25. The base station apparatus according to claim 22, wherein the transmitting section assigns a lower frequency band in a carrier center frequency for a communication terminal with having a higher priority.

25 26. The base station apparatus according to claim 22, wherein the transmitting section instructs each communication terminal on the repetition number of the frequency band information in accordance with the number

of the accommodated communication terminals.

27. The base station apparatus according to claim 21,
wherein the acquisition section performs the acquiring
5 when updating the frequency band assigned to the
communication terminals.

28. A reception method comprising the steps of:
determining a propagation path state through which
10 a received multicarrier signal is transmitted;
specifying a region having a propagation path state
that is equal to or better than a predetermined level
in a frequency band used for the received multicarrier
signal, according to the determination result and
15 reporting region information indicating the
specified region to a transmission apparatus.

29. A transmission method comprising the steps of:
from a reception apparatus acquiring frequency band
20 information indicating a frequency band having a
propagation path state equal to or better than a
predetermined level among a plurality of frequency bands,
into which a frequency band used for a transmission
multicarrier signal is divided and which are known to
25 both a transmission apparatus and a reception apparatus;
and
transmitting a signal to the reception apparatus

via the frequency band indicated by the frequency band
information.